

1       CLAIM 1.   An integrated cooling device, comprising:  
2                  a reservoir configured to contain a liquid coolant;  
3                  a pump disposed within said reservoir, said pump being configured to  
4                  circulate said liquid coolant between said reservoir and a heat source; and  
5                  a fan configured to provide a flow of air across said circulating liquid  
6                  coolant.

1       CLAIM 2.   The integrated cooling device of claim 1 wherein said liquid coolant is  
2                  circulated through a tubing arrangement.

1       CLAIM 3.   The integrated cooling device of claim 1 further comprising a motor  
2                  disposed within said reservoir, said motor being operably connected to said pump and  
3                  said fan.

1       CLAIM 4.   A cooling unit configured to circulate a liquid coolant, said cooling unit  
2                  comprising:  
3                  a reservoir configured to contain said liquid coolant;  
4                  a tubing arrangement disposed at an outer surface of said reservoir, said  
5                  tubing arrangement being fluidly communicable with a heat exchanging device;  
6                  a pump disposed within said reservoir, said pump being configured to  
7                  circulate said liquid coolant through said tubing arrangement to said heat exchanging  
8                  device; and  
9                  a fan configured to provide a flow of air across said tubing arrangement.

1       CLAIM 5.   The cooling unit of claim 4 further comprising a motor disposed within  
2                  said reservoir, said motor being operably connected to said pump and said fan.

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1       CLAIM 6.     The cooling unit of claim 4 wherein said tubing arrangement is coiled over  
2       said outer surface of said reservoir.

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4       CLAIM 7.     The cooling unit of claim 4 wherein said fan is configured to provide a  
5       forced induction of air over said tubing arrangement.

1       CLAIM 8.     The cooling unit of claim 4 further comprising a plurality of fins disposed  
2       over said tubing arrangement, said fins extending longitudinally in a direction of said  
3       flow of air across said tubing arrangement.

1       CLAIM 9.     The cooling unit of claim 8 wherein said fins are tubular in structure.

1       CLAIM 10.    The cooling unit of claim 9 wherein said tubularly structured fins are open  
2       at the ends thereof, thereby allowing said flow of air to be maintained within said fins.

1       CLAIM 11.    The cooling unit of claim 8 wherein said fins are fabricated from copper,  
2       copper alloys, aluminum, aluminum alloys, and combinations of the foregoing materials.

1       CLAIM 12.    The cooling unit of claim 8 further comprising a shroud disposed over said  
2       fins.

1       CLAIM 13.    The cooling unit of claim 12 wherein said shroud defines a primary air  
2       inlet at a lower end thereof.

1       CLAIM 14.    The cooling unit of claim 12 wherein said shroud includes a secondary air  
2       inlet disposed therein, said secondary air inlet being configured to allow for airflow  
3       communication between opposing sides of said shroud.

1       CLAIM 15. The cooling unit of claim 14 wherein said secondary air inlet is positioned  
2       on said shroud to register with a space defined by adjacently positioned fins.

1       CLAIM 16. The cooling unit of claim 14 wherein said secondary air inlet includes an  
2       air directing tab associated therewith, said air directing tab being configured to channel  
3       air into said secondary air inlet upon a forced induction of air by said fan.

1       CLAIM 17. The cooling unit of claim 12 wherein said shroud is fabricated from a  
2       material selected from the group consisting of plastic, metal, fiberglass, and combinations  
3       of the foregoing materials.

1       CLAIM 18. The cooling unit of claim 4 further comprising a cover disposed over said  
2       fan.

1       CLAIM 19. The cooling unit of claim 18 wherein said cover comprises,  
2                  a frame, and  
3                  a plurality of vanes pivotally mounted within said frame, said vanes being  
4       configured to rotate into an open position in response to an airflow generated by said fan.

1       CLAIM 20. A thermal dissipation system, comprising:  
2                  a heat exchanging unit; and  
3                  a cooling unit disposed in fluid communication with said heat exchanging  
4       unit, said cooling unit comprising,  
5                  a reservoir,  
6                  a pump disposed within said reservoir, said pump being configured to  
7       circulate a liquid coolant between said reservoir and said heat exchanging unit, and  
8                  a fan configured to remove heat from said liquid coolant.

1       CLAIM 21. The thermal dissipation system of claim 20 wherein said heat exchanging  
2       unit is a cold plate.

1       CLAIM 22. The thermal dissipation system of claim 21 wherein said cold plate is  
2       disposed in communication with electronic circuitry.

1       CLAIM 23. The thermal dissipation system of claim 20 wherein said cooling unit  
2       further comprises a motor disposed in operable communication with said pump and said  
3       fan, said motor being disposed within said reservoir.

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